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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-------------------------|---------------------|------------------|
| 10/505,348 | 08/19/2004 | Bokke Johannes Feenstra | NL02 0130 US | 5974 |

24738 7590 12/01/2006

PHILIPS ELECTRONICS NORTH AMERICA CORPORATION
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EXAMINER

CALEY, MICHAEL H

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| ART UNIT | PAPER NUMBER |
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2871

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/505,348

Applicant(s)

FEENSTRA ET AL.

Examiner

Michael H. Caley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwauchi et al. (U.S. Patent No. 5,841,492 "Iwauchi") in view of Liang et al. (U.S. Patent Application Publication No. 2002/0126249 "Liang").

Regarding claims 1 and 11, Iwauchi discloses a subtractive display device having picture elements having sub-pixels (Figure 1; elements 4a, 4b, 5a and 5b), each sub-pixel having, viewed during operation in a direction normal to the substrates, at least two independently switchable electro-optical components (Figure 1 elements 4 and 5), the device further comprising a color filter (Figure 1 element 6) in which each sub-pixel color filter part absorbs one of a part of the

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optical spectral range (Column 6 lines 39-54), the parts of the optical spectral range being substantially non-overlapping, the device comprising means for controlling absorption or reflection of remaining parts of the spectral range in each sub-pixel by the at least two switchable electro-optical components (Column 6 lines 55-67), the non-overlapping ranges together covering the optical spectral range (Column 6 lines 17-29).

Iwauchi fails to disclose the display device as containing two immiscible fluids as proposed in the embodiment of Figure 1. Liang, however, teaches two first fluids of different colors (Page 3 [0039]) and second fluids immiscible with the first fluids (Page 5 [0059]) within a space between the first support plate and the second support plate (Figure 8), the second fluid being electroconductive or polar (Pages 4 and [0054]) in which a picture element corresponds to a defined space having a wall part (Figure 8 element 80) dividing the space into at least three sub-picture elements, in the first state each of the first fluids adjoining separate support plates within each sub-picture element (Figure 8 element 85).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the electro-optical components disclosed by Johnson to be formed of the cell structure taught by Liang. Liang teaches liquid crystal with guest-dyes formed in microcups as advantageous to reduce the operation voltage while improving contrast (Page 1 [0009]-[0012]).

Alternatively, Liang teaches two immiscible fluids as proposed in the embodiment of Figure 4 (elements 12 and 13).

Regarding claim 2, Iwauchi discloses the two switchable electro-optical components in each sub-pixel as switchable between a substantially transparent or translucent state and a state absorbing or reflecting a first part of the remainder of the spectral range (Column 6 lines 55-67).

Regarding claims 3-5, Iwauchi discloses a further switchable electro-optical component in each sub-pixel as switchable between a substantially transparent or translucent state and a state absorbing or reflecting the remainder or a part of the remainder of the spectral range (Column 6 lines 55-67).

Regarding claim 6, Iwauchi discloses cyan, magenta and yellow color filter parts (Column 6 lines 39-54), at least one of two switchable electro-optical components in each sub-pixel as being switchable between a substantially transparent or translucent state and one of the colors cyan magenta and yellow (Column 6 lines 31-44).

Regarding claims 7 and 8, Iwauchi discloses the other of the two switchable components as switchable to one of the colors cyan, magenta and yellow, or red, green and blue (Column 6 lines 31-44).

Regarding claim 9, Iwauchi discloses a sub-pixel as corresponding to a defined space (Figure 1).

Regarding claim 10, Iwauchi discloses each sub-pixel having between a first support plate and a second support plate (Figure 1 elements 1, 2, and 3), at least two switchable electro-optical layers, the device comprising means for creating at least two different states in each layer, the layers in a sub-pixel switching between a substantially transparent or translucent state and two different colors (Column 6 lines 55-67).

Regarding claim 12, Iwauchi discloses a reflector at the side of one of the substrates (Figure 9 element 64).

Regarding claim 13, Iwauchi discloses n independently switchable electro-optical components and means for controlling the absorption or reflection of remaining parts of the spectral range in each subpixel by (n-1) switchable electro-optical components (Figure 1 elements 7, 8, 9 and 10).

Response to Arguments

Applicant's arguments filed 9/15/06 have been fully considered but they are not persuasive.

Regarding the rejection of claims 1 and 13, Applicant argues that Iwauchi and Liang fail to teach the limitations “wherein the electro-optical components further comprise at least one first fluid and a second fluid, wherein the second fluid and the first fluid are immiscible”.

Applicant first argues that the prevention of intermixing is only during fabrication, and not the resultant product. The examiner disagrees and maintains the rejection. In the cited

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portion (Page 5 [0059]), Liang discloses a thin layer overcoat between the liquid crystal and the sealing composition to prevent intermixing between the two fluids and the dye used in the liquid crystal as soluble in the sealing composition.

Applicant also argues that the overcoat of Liang never functions as a material of an electro-optic component as claimed. The examiner disagrees and maintains that the sealing composition functions as an electro-optic component. As shown in Figure 8, the sealing composition is placed between the conductive film and the liquid crystal composition. Due to its placement in the pixel between the conductive film and the liquid crystal composition, it must be both electrically conductive and transparent and therefore functions as an electro-optic component.

It is noted that Iwauchi may be alternatively interpreted to disclose two immiscible fluids as currently proposed in claim 1. In the embodiment of Figure 4, Iwauchi discloses a first fluid (12) immiscible with a second fluid (13).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael H. Caley
November 24, 2006


mhc


ANDREW SCHECHTER
PRIMARY EXAMINER